Important Advances in Clinical Medicine

Epitomes of Progress—Ophthalmology

The Scientific Board of the California Medical Association presents the following inventory of items of progress in ophthalmology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist the busy practitioner, student, research worker or scholar to stay abreast of these items of progress in ophthalmology which have recently achieved a substantial degree of authoritative acceptance, whether in his own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Ophthalmology of the California Medical Association and the summaries were prepared under its direction.

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Vitrectomy

VITREOUS has long been considered the enemy of ophthalmic surgeons. Only a few years ago, one's skill was measured in no small degree by the ability to avoid contact with the vitreous, and the vitreous cavity itself was "off limits" to surgical intervention. Recently, this all has changed, and changing attitudes and capabilities for dealing with the vitreous are revolutionizing intraocular surgery.

In 1968 Kasner and co-workers reported the successful removal of nearly all diseased vitreous from an eye with primary amyloidosis, using his so-called open sky technique. This opened the door for new surgical techniques to remove vitreous and intraocular strands in a variety of diseases. It quickly became evident that the open sky technique had several hazards: the lens had to be removed, resulting in aphakia; there were possible further complications of the large corneal section or corneal graft; the iris was irritated and frequently severe inflammatory reaction resulted; instruments for the procedure were usually inadequate and too large; traction on vitreous during the cutting near the iris plane was unavoidable, and collapse of the eye prevented adequate visualization of certain areas of the posterior segment.

In 1971 Machemer and associates reported their initial results on the pars plana approach to vitrectomy. Pars plana vitrectomy was developed with the following objectives in mind: To eliminate the anterior segment problems seen in open sky vitrectomy, the anterior segment should be left intact and the vitreous should be removed through a very small incision at the pars plana. To improve on instrumentation, only one miniaturized multifunction instrument should be introduced into the eye. This instrument would have to